REMARKS

Claims 1 and 5-22 are pending. Claims 2-4 have been canceled with their limitations incorporated into amended claims 1, 12, and 13. Claims 14-22 are newly added and are supported by page 5, lines 1-5; page 6, lines 4-9; page 7, lines 23-26; and page 10, lines 14-27. It is respectfully submitted that no new matter has been added.

The Patent Office rejected claims 1-6 and 11 under 35 U.S.C. 102(b) as being anticipated by Lyon, U.S. Patent No. 6,512,858.

For a claim to be anticipated, each and every claim limitation that is non-inherent must be disclosed by a reference (MPEP 2131).

The Patent Office rejected claims 7, 9, 10, 12, and 13 under 35 U.S.C. 103(a) as being unpatentable over Lyon.

Claim 1 recites "A system for displaying an image captured by a sensor array, the system comprising a buffer for storing an output from a first plurality of sensors of a sensor array; means for processing the stored output to create an image corresponding to an output from a plurality of sensors within a first area of the sensor array, wherein the plurality of sensors within the first area of the sensor array are a subset of the first plurality of sensors; means for displaying the image; and means for changing the image displayed by translating the first area."

Claim 12 recites "A method for displaying an image, the method comprising temporarily storing an output from a first plurality of sensors of a sensor array; processing the stored output to create an image corresponding to an output from a plurality of sensors within a first area of the sensor array, wherein the plurality of sensors within the first area of the sensor array are a subset of the first plurality of sensors; displaying the image corresponding to an output from the plurality of sensors within the first area of the sensor array; and displaying a different image in response to a user input that is equivalent to translating the first area within the sensor array."

Claim 13 recites "A system for displaying an image, the system comprising a buffer for storing an output from a first plurality of sensors of a sensor comprising an N x M array of light sensors, and a processor for processing the stored output to create an image comprising an n x m array of pixels corresponding to an output from an n x m subset of the N x M array of light sensors, wherein the n x m subset of light sensors are a subset of the first plurality of sensors, and for controlling a display to display the image, wherein the corresponding n x m subset is

changeable in response to a user input to vary the image for display."

Embodiments of the present invention provide a system 10 for capturing an image using a sensor array 14 and for displaying the image on a display 12. The sensor array 14 includes an N x M array of light sensors and the display 12 includes an n x m array of pixels. The n x m array of pixels of the display 12 corresponds to an n x m subset of the N x M array of sensors 14 ('the first area of the sensor array 14').

A user of the system 10 may operate a user input device 24 to control which n x m subset of the N x M array of sensors is displayed on the display 12. Consequently, the user is able to translate the first area of the sensor array 14 to change the image which is displayed on the display 12. Additionally, embodiments of the present invention may be used in conjunction with digital zoom (see fig. 4).

As mentioned on page 2 lines 8 to 12 of the Applicant's specification, one advantage provided by embodiments of the present invention is that they may reduce the physical movement of a camera when in use. This is because the user may translate the first area within the sensor array to produce a different image instead of physical handling the camera to change its bearing and / or inclination.

In a first embodiment of the Applicant's invention (see Figs. 1A & 1B) the system includes a buffer 22 which receives image data (a) from all of the sensors of the N x M array of sensors 14. A processor 16 processes the image data (a) stored in the buffer 22 to produce image data (b) which is then displayed on the display 12 and stored in the memory 18. As mentioned on page 2, lines 25 to 27, one advantage provided by this embodiment is that the buffer 22 enables the system 10 to capture data at a rate greater than the processing rate of the processor 16.

In a second embodiment of the Applicant's invention (illustrated in Figs. 2A & 2B), the processor 16 selectively reads image data from the first area of the sensor array 14 which is then used as display data. The system 10 in this embodiment does not comprise a buffer 22.

In a third embodiment of the Applicant's invention (see Figs. 3A & 3B), the processor 16 receives image data (a) from the sensor array 14. Image data (a) corresponds to the output of the

whole of the sensor array 14. Image data (a) is then stored in the memory 18 by the processor 16. At a later time when a user of the system 10 wishes to view the image data, the processor 16 processes image data (a) to create display data (b). Display data (b) is an n x m subset of the image data (a) and corresponds to the first area of the sensor array 14.

Lyon is concerned with speedily displaying a high-resolution image sensor pixel array onto a lower resolution viewer screen, whereas Applicant is concerned with capturing multiple images without undue movement of a camera by a user. Lyon discloses an electronic camera 10 including a pixel sensor array 12 and a viewfinder display 20, whereby the resolution of an image produced by the whole of the sensor array 12 is greater than the resolution of the viewfinder display 20 (see col. 6, lines 15 to 17). An image produced by the whole of the sensor array 12 may be stored in a storage system 18 of the electronic camera 10.

The sensor array 12 is controlled by a flexible address generator circuit 14 which is in turn controlled by a control circuit 16. With reference to Fig. 2, the flexible address generator circuit 14 includes a row address generator 36 and a column address generator 40 which are operable to enable only a predetermined subset of the sensor array 12 to be read (see fig. 2, col. 6, lines 50 to 64 and col. 7 line 63 to col. 8, line 29). The positioning of the predetermined subset may be determined by the user (see col. 2, lines 54 to 59 and col. 9, lines 3 and 4). The size of the predetermined subset is determined by the mode which is selected by the user of the electronic camera 10. In Lyon, there is no disclosure or suggestion of translating the first area within the sensor array; instead, a user in Lyon selects a start point corresponding to a zoom mode.

Each mode of the electronic camera 10 defines a 'k' value. The 'k' value determines the number of sensors which are skipped when the sensor array 12 is read. If k =1, no sensors are skipped and a high resolution image is displayed on the viewfinder display 20. If k = 2, every other sensor is skipped and a lower resolution image is displayed on the viewfinder display 20. For example, in the high resolution partial image display mode, each sensor within a predetermined area of the sensor array 12 is read (i.e. k = 1). The predetermined area of the

sensor array produces an image having the same resolution as the viewfinder display. Fig. 4c shows an image obtained using this mode.

As mentioned in col. 2, lines 54 to 59, one object of Lyon is "to provide easy panning control, which changes the start readout location along the horizontal and vertical dimensions of the active pixel sensor array. Each sequential pixel sensor addressing mode allows for an arbitrary pixel sensor readout starting point."

Lyon does not appear to disclose the features of "a buffer for storing an output from a first plurality of sensors of a sensor array" or "means for processing the stored output to create an image corresponding to an output from a plurality of sensors within a first area of the sensor array, wherein the plurality of sensors within the first area of the sensor array are a subset of the first plurality of sensors" as recited in claim 1. In the Patent Office's rejection of claim 3, the buffer 22 of the present invention has been equated with the storage system 18 of Lyon. However, Lyon does not disclose that the storage system 18 acts as a buffer that stores an output from a first plurality of sensors of a sensor array. Nor does Lyon disclose that a processor processes the stored output in the storage system 18 to create an image corresponding to an output from a plurality of sensors within a first area of a sensor array and that the plurality of sensors within the first area of the sensor array are a subset of the first plurality of sensors of the sensor array. Therefore, claim 1 is not anticipated by the present invention.

Lyon teaches that if an output from a particular subset of sensors of a sensor array is desired, then only those sensors within that particular subset are read. It provides the flexible address generator 14 and the control circuit 16 for this purpose. It would be contrary to the teaching of Lyon to adapt it to read sensors outside that particular subset of sensors. Consequently, it would not be obvious to a person skilled in the art to adapt Lyon to fall within the scope of embodiments of the present invention. In summary, attached claim 1 is novel and non-obvious because it recites a buffer which stores an output from a first plurality of sensors of a sensor array. Additionally, it recites that the stored output is processed to create an image which corresponds to a first area of the sensor array and that the first area is a subset of the first

plurality of sensors. These features are neither suggested nor disclosed by Lyon. In fact, as mentioned above, Lyon provides a contrary teaching to embodiments of the present invention.

Claims 12 and 13 are not anticipated or rendered obvious by Lyon for the same reasons as mentioned above.

Claim 7 recites "translation of the first area within the sensor array." Claim 8 recites "translation in a first direction" and "independent translation in a second direction, substantially perpendicular to the first direction." Claim 10 recites "simultaneously resize and translate the first area." Regarding claims 7, 8, and 10, Lyon discloses selecting a start point and applying a zoom mode and does not disclose or fairly suggest translation. Further, as to claim 8, a simple statement that a difference is a design choice is conclusionary, is not a statement of fact, and is insufficient rationale to support a well written and legally sufficient rejection. Thus, claims 7, 8, and 10 are allowable over Lyon for these additional reasons.

The Patent Office is respectfully requested to reconsider and remove the rejections of the claims 1 and 5-22 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) based on Lyon, and to allow all of the pending claims 1 and 5-22 as now presented for examination. An early notification of the allowability of claims 1 and 5-22 is earnestly solicited.

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